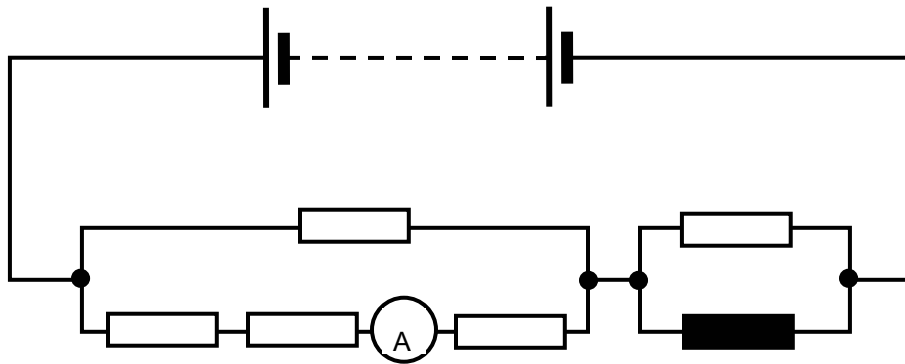
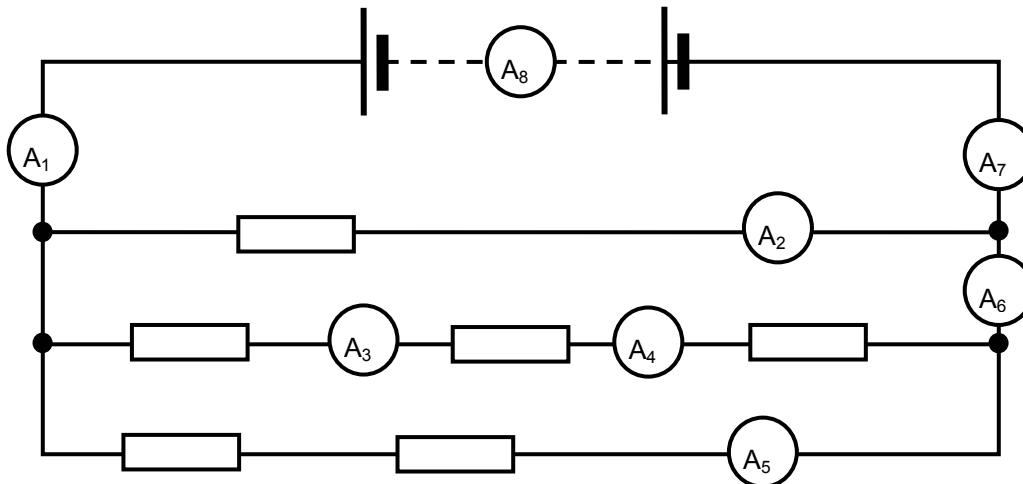


TAP 117- 5: Questions on Kirchhoff's laws

1. Ten lamps are connected in series across a power supply. The voltage across each lamp is 6.0 V. What is the voltage of the supply?
2. Ten lamps are connected in parallel across a 12 V supply. What is the voltage across each lamp?
3. The ammeter below reads 1.0 A. All the resistors have the same value. What is the current through the black resistor?

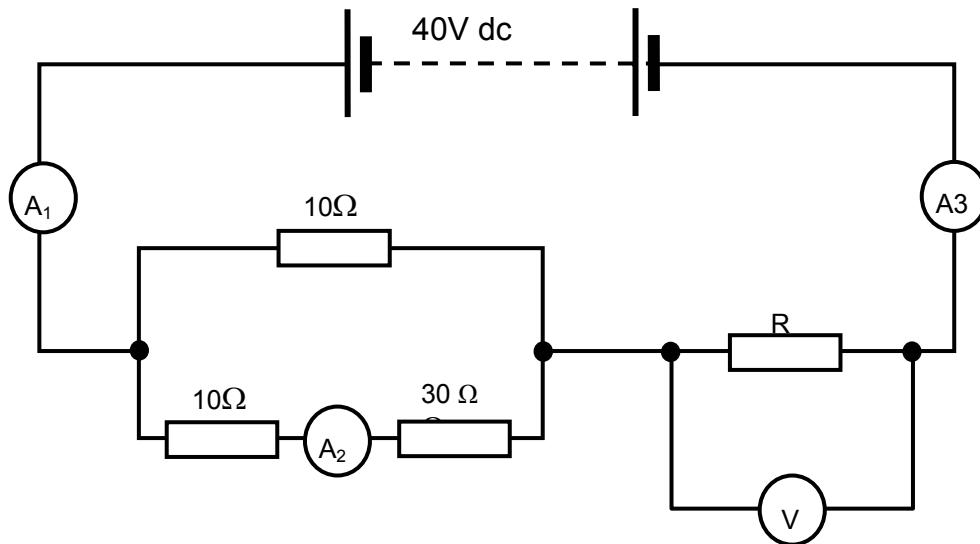


4. Look at the circuit below and answer the questions that follow:



Ammeter A_5 reads 3 A. All the resistors have the same value of $10\ \Omega$. What are the readings on ammeters A_1 to A_8 and what is the terminal voltage of the battery?

5.



The voltmeter across R reads 24 V

- What is the voltage across the upper 10 Ω resistor?
- What is the current through the upper 10 Ω resistor?
- What is the voltage across the lower part of the parallel circuit?
- What is the reading on ammeter A_2 ?
- What are the readings on ammeters A_1 and A_3 ?
- What is the value of R?

Answers

- 60 V
- 12 V
- 2 A
- $A_1 = 11$ A, $A_2 = 6$ A, $A_3 = 2$ A, $A_4 = 2$ A, $A_5 = 3$ A, $A_6 = 5$ A, $A_7 = 11$ A, $A_8 = 11$ A
- 16 V
 - 1.6 A
 - 16 V
 - 0.4 A
 - 2.0 A
 - 12 Ω